PRACTICAL HINTS ON PLASTER CASTS

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HOW many nurses have really had the opportunity to see a competent orthopedic surgeon apply a plaster cast? To some nurses a request to assist in the application of a cast would make them feel more helpless than a call to assist in the operating room. The following article is intended to give a few practical points on the subject.

The surgeon may be ever so skillful in the art of applying plaster, but with poor plaster or material the cast will be a failure, from the practical as well as from the artistic standpoint. The best plaster bandages are made by using dental plaster on a good quality of crinoline. Crinoline that has twenty-eight to thirty threads to the inch should be used. Cheap crinoline is not an economy, as the mesh is usually so large that it will not retain the proper amount of plaster and therefore just about twice the usual amount of bandages will be used.

Bandages of different lengths and widths should always be kept on hand. For adults, the bandages should be six yards in length and in widths of 4½, 6, 7½, and 9 inches. For children, have bandages four yards in length and 2½ and 3½ inches wide. For club foot casts on infants, have the bandages three yards long and 1½ or 2 inches wide. A longer bandage in a narrow width would make a cumbersome roll, hard to apply on a tiny foot. Always tear your crinoline lengthwise, do not cut it. Then fringe the crinoline by removing about five threads from both edges. If this is not done the threads will pull out when the plaster is soaked and will act as tight strings when the bandage is being unrolled. After fringing, roll each bandage loosely so as to avoid creases.

Now we are ready to put the plaster on the crinoline. The writer has found that the easiest and most satisfactory way is to stretch a sheet tightly across a smooth table and fasten it securely with tacks or pins. Do not have any wrinkles in the sheet, as they will become hard ridges when filled with plaster and will make it more difficult to apply the plaster evenly. Place your roll of crinoline on the sheet with the end toward you so that in unrolling it will roll away from you. Take a bowl, about six inches across the top and about four inches deep and fill it with plaster. Invert the bowl with the plaster under it on to the crinoline. Push the bowl away from you, exerting a steady pressure. This will cover the crinoline with a thin, smooth layer of plaster and fill in all the tiny meshes. Roll the crinoline with

the plaster very loosely, leaving an opening in the middle large enough to admit your thumb. Pull the roll toward you, push the bowl away from you again, and repeat the process until the length of crinoline has been covered and rolled. The plaster under the bowl must be replenished frequently, because if there is an insufficient amount of plaster it will not fill all the meshes in the crinoline. The bandage should be rolled loosely so that when immersed in water it will have a chance to absorb the necessary amount. Wrap each bandage in a separate paper napkin to prevent losing the plaster in handling. Keep all bandages in a tin box in a dry place.

Now that we have our bandages made, we will assemble the rest of the material for the cast. First we want stockinette for a smooth, comfortable foundation for the cast. If this is not available, use a cotton vest for a body cast and cotton stockings for leg or arm casts. Put this on the patient, leaving it long enough around the toes and at the top so that after the cast is trimmed it may be turned back and fastened with adhesive and in this way make a neat finish. If applying a body cast, take a towel folded to about eight inches wide and three-fourths of an inch in thickness and place under the stockinette over the region of the stomach. This is particularly advisable when the patient is under an anaesthetic and is not breathing as deeply as he would if he were awake. After the plaster is applied, this folded towel or "dinner pad" is removed and you will find that your patient will have ample room for deep breathing and a hearty meal the next day without having to have the cast split down the front. Under the stockinette should be placed, lengthwise, a strip of muslin bandage about 6 inches in width and long enough to allow the projecting ends to be pinned together. This is the "scratcher." Now a word about padding in the cast. For this purpose sheet wadding is most commonly used. This is cut in two-yard lengths and in widths of from three to eight inches. For protection of all bony prominences piano felt may be used. Have one pad under the sacrum and one pad over each anterior superior spine, and other pads wherever any undue pressure is to be applied. After the sheet wadding has been applied, a smooth finish will be obtained by covering the whole thing with a paper bandage. The paper bandage is given preference over the gauze bandage on account of its elasticity and compression qualities. Sometimes flannel bandages cut on the bias may be asked for in place of the paper.

Now comes the application of the plaster bandages which, of course, is always done by the surgeon. Nurses may be pressed into service here for the holding of a leg or foot in the proper position. This is a very important duty, as much of the success of the operation

may depend upon the position in which the part is held while the cast is being applied.

Have two pails of hot water ready and add one cupful of salt to each pailful. This makes approximately a 2 per cent solution and hastens the setting of the plaster. Pick up a bandage, poke a hole in each end of the paper, and place it on end under water. Allow it to remain in the water until all the air bubbles have ceased to come to the top. Remove from the water, holding one hand over each end, and give one gentle, continuous squeeze so as to get rid of the excess water. Remove the paper, find the end of the bandage, unroll about one inch and it is ready to hand to the surgeon. For a cast that is to remain on for a few months, reënforcements should be used to strengthen weak places. Basket splinting, two inches in width, soaked in water and incorporated with the plaster will strengthen the cast materially.

After the plaster is applied, the patient is usually placed in the nurse's care. All casts should be trimmed to allow the use of the bed pan, before returning the patient to the ward. In the front trim to the pubis, and in the back to the tip of the sacrum and only one inch to the side of the gluteal cleft. If trimmed away more than one inch from the gluteal cleft, the cast becomes very uncomfortable from having the buttocks constantly pushing out beyond the cast edge and becoming irritated from the pressure. The tips of all the toes should be exposed and watched carefully for the first twenty-four hours. If the toes become cyanotic, it is a danger signal and means that the cast is too tight and is shutting off the circulation. Elevate the leg and notify the nurse or interne in charge of the ward. If the toes do not resume their normal color in a short time, the cast may have to be cut to relieve the constriction. All rough edges should be bound with adhesive tape. If the patient at any time complains of pressure at the heel or at any bony prominence, do not fail to have the cast cut, as a few hours' delay may mean a pressure sore. To have a cast pressure sore develop should be just as great a source of humiliation to the nurse as a bed sore would be.

The "scratchers" give much comfort to patients in body casts. The nurses are instructed to sprinkle them liberally with talcum and then to work them up and down. They are easily changed by attaching a new length of bandage to the old, and pulling it through as before.

Above all things, see that your patient is comfortable in the cast. If he is irritable or fussy there must be pressure somewhere. A child with a diseased joint that is held in the proper position and fixed in a comfortable, well fitting cast is one of the happiest invalids that you will ever see in your profession.